



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,872	09/11/2006	Kevin J. Schrage	00758.1511USWO	5901
23552	7590	09/09/2008	EXAMINER	
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			CLEMENTE, ROBERT ARTHUR	
		ART UNIT	PAPER NUMBER	
		1797		
		MAIL DATE	DELIVERY MODE	
		09/09/2008	PAPER	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/549,872	SCHRAGE ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	ROBERT A. CLEMENTE	1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is **FINAL**.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 28-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 28-43 is/are allowed.
- 6) Claim(s) 44-47 is/are rejected.
- 7) Claim(s) \_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 15 September 2006 is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. ____ .
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>20050915,20071025</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application
	6) <input type="checkbox"/> Other: ____ .

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “406” has been used to designate both a back side and an arrow in figure 11. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

“50” in figure 5 as in page 11 line16.

“120” in figure 6 as in page 12 line 38.

“222” in figure 7 as in page 13 line 28.

“325a” in figure 19 as in page 15 line 2.

“441a” and “441b” in figure 11 as in page 18 line 21.

“855” in figure 21 as in page 29 line 18.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

"55" and "53a" in figure 5.

"4419" and "416" in figure 11.

"352a" in figure 19.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37

CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

4. The disclosure is objected to because of the following informalities: In page 13 lines 21 and 22, "Fig. 26" should be changed to --Fig. 6--.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claim 44 is rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 6,190,432 to Gieseke et al.

The method steps of claim 28 of the instant application will produce a z-filter media having an obround shape and a coreless coil. In figures 10 and 11, Gieseke shows a filter (470) with a z-filter media (455) that has an obround shape. In figure 11,

the filter media (455) is shown with a core (454), however, as disclosed in column 10 lines 7 - 15, the filter media can be made in a different manner by winding the media around a mandrel and removing the mandrel. By this method, the wound filter media would not have a core in the coil. Thus, the filter media of Gieseke would have the same structure as the media produced by the method of claim 28 of the instant application.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 45 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 6,190,432 to Gieseke et al. in view of US Patent No. 6,743,317 to Wydeven.

Gieseke teaches a z-filter media construction comprising: a coreless coil of corrugated sheet/facing sheet; the coreless coil having an obround shape with two

opposite curved ends; and, a framework mounted on the coreless coil at the end of the coreless coil and with a portion of the framework surrounding an end of the coreless coil; the frame work including a housing seal ring. See figures 10 - 13 and the respective portion of the specification. The coreless coil and the obround shape of the media (455) of Gieseke are discussed above in paragraph 6. Further as shown in figure 11, the filter media (455) has two opposite rounded ends (511, 512) and two opposite straight ends (513, 514). The fluted construction (122) of the media is shown in figure 2. The media is shown to include a corrugated sheet (123) and a facing sheet (132). Figure 10 shows the filter (450) of Gieseke with the framework (605), while figures 12 and 13 show just the framework. As shown in figure 10, the framework (605) is mounted at the end of the coil with a portion of the framework surrounding an end of the coil. As best shown in figure 13, the framework (605) includes a tip portion (663) that forms a ring to hold the seal member (650), which can inherently be considered a housing seal. As shown in figure 2, the media of Gieseke include two sealing beads to close off alternating flutes at alternating ends. Depending upon the coiling one of the beads will inherently become the backside sealing bead. As discussed in column 4 lines 37 - 42, the sealant used can be selected from a number of different types; however, Gieseke does not distinctly disclose using a urethane sealant. Wyden discloses a similar filter media constructed from a flat sheet (26) and a corrugated sheet (20) which are formed into a roll (30B), or coil. Continuous beads (40, 42) are used to form plugs at each end of the media in a similar as that of Gieseke. As disclosed in column 8 lines 48 - 51, these beads (40, 42) can be a foaming urethane type resin. Thus, it would have been

obvious to one of ordinary skill in the art at the time of the invention to modify Gieseke to use a urethane as the sealant beads in the media as suggested by Wydeven since it is known in the art that urethane forms an effective sealant to seal the flutes of z-filter type media.

In regard to claim 45, the method steps of claim 28 of the instant application will produce a z-filter media having a coreless coil with an obround shape and a backside sealant bead of foamed urethane. The obround shape has two opposite and two straight ends. The method will also produce a framework on the media coil with a housing seal ring on the framework. As discussed above, the combination of Gieseke and Wydeven includes all of these structural limitations. Thus, the filter media of Gieseke and Wydeven would have the same structure as the media produced by the method of claim 45 of the instant application.

10. Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gieseke and Wydeven as applied to claim 45 and 46 above, and further in view of US Design Patent No. D484,584 to Anderson et al.

Gieseke and Wydeven are discussed above in paragraph 9. Gieseke is used as the primary reference teaching the framework. The framework of Gieseke is shown to have a seal ring (663) with two opposite curved ends and two opposite straight ends. Gieseke, however, does not disclose one of the curved ends to have a wider outer dimension than the other curved end. As shown in figures 1 - 3, Anderson discloses a design for a framework with a housing seal for an obround z-filter media coil, where one of the opposite curved ends of the housing seal ring has a wider dimension than the

other. One of ordinary skill in the art would reasonably expect that the shape of the housing seal ring could be constructed in any manner that would conform to the particular housing it is used in. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Gieseke and Wydeven to include a housing seal ring on the framework with one curved end having wider outer dimensions than the other curved end as suggested by Anderson in order to seal the filter into a housing conforming to this shape.

***Allowable Subject Matter***

11. Claims 28 - 43 are allowed.
12. The following is a statement of reasons for the indication of allowable subject matter:

The examiner did not find any prior art that taught or suggested a method of preparing a z-filter media construction including steps of: coiling a corrugated sheet/facing sheet strip on a hub; removing a resulting coil from the hub to provide a coreless coil; and, distorting the coreless coil to an obround shape by pressing on a side area of the coil comprising facing sheet.

The most relevant prior art is represented by US Patent No. 6,190,432 to Gieseke et al. and US Patent No. 6,348,084. As discussed above, Gieseke '432 discloses constructing an obround coreless media coil by winding filter media (122) around a mandrel and removing the mandrel. Gieseke '432 does not disclose a step of distorting the media once it is coiled to produce the obround shape. Thus, although the

shape of the mandrel is not disclosed, one of ordinary skill in the art would reasonably expect the mandrel to have a generally elongated shape so that the obround shape of the media is formed in the winding step. Gieseke '084 also discloses a method of making an obround filter comprising z-filter media. As disclosed in column 5 lines 43 - 64, the filter media (122), as shown in figure 4, is wound around a handle member (70), as shown in figure 8, to produce the obround filter shown in figure 5. Thus, Gieseke '084 also discloses a method where an obround filter is formed by winding the media around an elongated center core, or mandrel, to produce the obround shape. Neither Gieseke reference teaches or suggests the step of distorting a coreless coil to an obround shape by pressing on a side area of the coil.

### ***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Other prior art references listed on the PTO-892 (Notice of References Cited) are considered to be of interest disclosing similar filter elements and their method of construction.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT A. CLEMENTE whose telephone number is (571)272-1476. The examiner can normally be reached on M-F, 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RAC

/Frank M. Lawrence/  
Primary Examiner, Art Unit 1797